

Notice of Allowability

Application No.

10/686,351

Examiner

Johnny H. Hoang

Applicant(s)

ITO ET AL.

Art Unit

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed on 10/14/2003.
2. ☒ The allowed claim(s) is/are 1 and 2.
3. ☒ The drawings filed on 14 October 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>10/14/2003</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Henry C. Yuen
Supervisory Patent Examiner
Group 3700

EXAMINER'S COMMENT

Reasons for Allowance

1. Claims 1-2 are allowed.
2. The following is an examiner's statement of reasons for allowance:

The prior art fails to disclose or render obvious the claimed combination including obtaining, at each predetermined time interval, a flow rate of air, which is taken into the engine in an operational state at the time; detecting an engine speed, a fuel flow rate, and a difference in pressure in front of and behind the EGR valve, in said operational state; obtaining a target EGR valve opening degree in said operational state from relationship of the target EGR valve opening degree, which is previously set, corresponding to the detected engine speed and the detected fuel flow rate; obtaining a virtual EGR gas flow rate from the detected pressure difference and the target EGR valve opening degree in said operational state; obtaining a virtual EGR rate from the obtained air flow rate, the detected fuel flow rate, and the virtual EGR gas flow rate; obtaining a target EGR rate in said operational state from relationship of the target EGR rate, which is previously set, corresponding to the detected engine speed and the detected fuel flow rate; obtaining an EGR valve opening degree correction coefficient in said operational state from relationship of the EGR valve opening degree correction coefficient, which is previous set, corresponding to a difference or a ratio of the virtual EGR rate and the target EGR rate; obtaining a command EGR valve opening degree to be used for an actual control from the EGR valve opening degree correction coefficient in said operational state, and the target EGR valve opening degree in said operational state; and operating an actuator for driving said EGR valve to attain the command EGR valve opening degree.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the

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issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The copies of U.S Patent are provided.

Itoyama (US 6,502,563), Majima (US 6,425,371), Itoyama et al (US 6,230,697), Kawatari et al (US 6,199,537), and Itoyama et al (US 5,918,582).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johnny H. Hoang whose telephone number is (703) 308-2782. The examiner can normally be reached on Monday - Thursday (7:00Am-5: 30Pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on (703) 308-1946. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHH
November 10 2004

Johnny H. Hoang
Examiner
Art Unit 3747


Henry C. Yuen
Supervisory Patent Examiner
Group 3700